SHARING GOOD TEACHING PRACTICE: PRACTICAL

Gail Chittleborough, Coral Campbell, Peter Hubber, Russell Tytler

Aim of the Study

The study investigated the impact of an intensive professional development (PD) program PD on teaching practice. The PD was designed to assist teachers to embed ICT into the classroom.

The Research Question

How did teachers adapt their teaching practice to embed ICT into their classroom teaching?

Answers

Method

16 primary and secondary teachers attended an intensive five day PD program that focussed on:
• the development of expertise in a range of ICT software and web resources, such as blogs, Learning Federation - LFO, IWB, digital storytelling, search engines etc
• classroom strategies and approaches.
• research, curriculum, inclusive practice
• Pedagogy of using ICT, interdisciplinary & integration
Support continued for 6 months via telephone, e-mail visits. Data included questionnaires, interviews web-blogs.

Starting Point - One of Variation

• The resources and levels of technologies available at schools varied enormously
• Teachers' previous experience, competencies and expectations with ICT also varied
• ICT policy at most schools varied
• Many of the teachers thought of ICT in technical terms.
• Tension between ICT applications and learning focus

Results

• The PD resulted in innovation & change
• All teachers improved their use of technologies in the classroom – to varying degrees.
• Most teachers adapted to the technologies available at their individual school, often displaying creativity, resourcefulness, management and organisational skills.
• Some teachers developed pedagogical strategies to integrate the technology seamlessly in their lessons
• Some teachers made teaching programs e.g. making graphs below, and adapted ready made software.

MAKING GRAPHS ON EXCEL
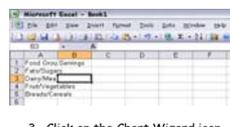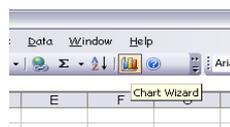
Differentiated Pedagogies

• Planning alternative independent activities
• Allowing students to became risk-takers
• Using technology to cater for differences-
"a difference in expectations was really obvious from the start. So .. the technology gave me the capacity to do that." Rae

STRATEGIES TO INTEGRATE ICT INTO THE CLASSROOM

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Planning
- Putting internet sites & resources on intranet
- Lists of student-friendly search engines
- Having IWB at child's level
- Booking sheets
- Curriculum planning,-e.g. *I am attempting to link the writing ICT activity to the topic we are covering in Integrated Studies*" Sarah
- Allowing time -*"People think preparation of curriculum takes more time with tech. This is true initially but you need to convince them that in the long term time is saved"* Rae

Using new resources
- Utilizing alternative delivery modes - e.g. animation, videos available on selected websites
- use of one website with a range of age groups by varying the students' tasks.
- IWB - visual, auditory, kinaesthetic, engaging, able to pre-prepare materials for display, never run out of space etc
- *"The kids are the primary users of the smartboards. "* Rae

Promoting Reflection
- Roslyn's Grade 6 class kept journals, evaluating software.- giving critical comment–see examples above
- Blogs were used by students to discuss assignment tasks

Co-operative approaches
- A cooperative approach- "ask three before you ask me" – helping each other, becoming experts themselves
- The skill of being a Problem solver was recognised – encouraging students to solve their own problems.
- Dividing class into groups- rotation
- Having a Computer Buddy
- Behaviour management techniques
- Team teaching- sharing good practice
- Sharing across the schools involved in the project –networking.

Working within constraints
- At a small school with one data projector and limited computers, Melanie shared a wireless mouse so all students could work together.
- Roslyn's students had 3 alternative tasks to work on while waiting for the server.
- Timed Rotation- for access.
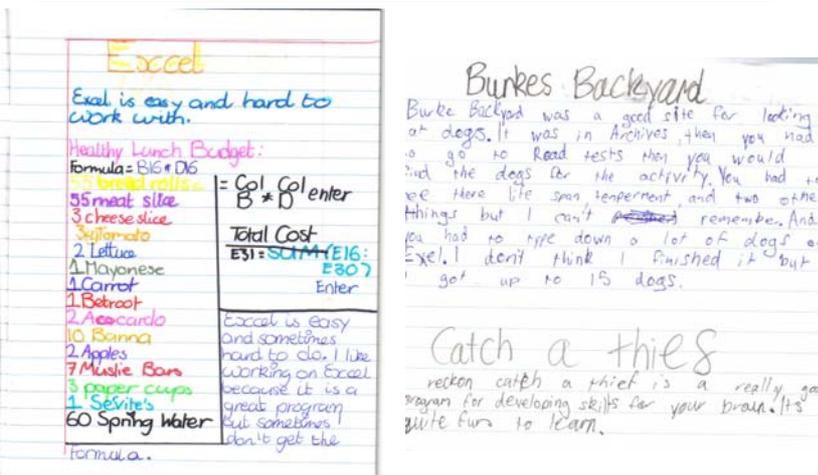
Using innovation to motivate
- Examples of students own work – power points, photo-stories etc
- Students have ownership of tasks.
- Students were excited about their animation, moviemaking digital story telling etc

Things That influenced Teachers Strategies
- Sharing, Networking on the blog
- Adapting to the available resources
- Taking on leadership roles
- PD gave them authority to instigate changes
- Overcoming teachers lack of confidence through teamwork, instruction, support
- Seeing students self efficacy improve

SHARING GOOD TEACHING PRACTICE: PRACTICAL STRATEGIES TO INTEGRATE ICT INTO THE CLASSROOM

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Situated in regional areas of Victoria, a group of 16 primary and secondary teachers participated in an intensive program of professional development designed to assist them in embedding ICT into their classroom practice. Most teachers made significant changes to their teaching practice becoming risk-takers and problem solvers.This paper reports on the strategic innovations introduced by the teachers including training, preparation, curriculum planning, software evaluation and selection, classroom management strategies, cooperative learning strategies and embedded assessment tasks. The paper will explore the ways these innovations responded to a variety of constraints including limited resources, time and support.

SHARING GOOD TEACHING PRACTICE: PRACTICAL STRATEGIES TO INTEGRATE ICT INTO THE CLASSROOM

Synopsis

Objectives:
Situated in regional areas of Victoria, a group of 16 primary and secondary teachers participated in an intensive program of professional development designed to assist them in embedding ICT into their classroom practice. The cohort of schools was diverse in their size, available ICT resources, religious affiliation and location. The aim of this paper is to report on the variety of practical strategies that teachers have used in their quest to integrate ICT into their classroom and to highlight how teachers respond to their particular needs.

Theory

Contemporary society is changed by the escalating influence of technology- the digital revolution. Policies are in place for our teaching and learning to reflect these changes. Goal 1.6 of the National Goals for Schooling in the Twenty-first Century: *"When students leave school they should be confident, creative and productive users of new technologies, particularly information and communication technologies, and understand the impact of those technologies on society."*(MCEETYA report). Meeting these expectations for all students in all regions becomes difficult when there are limited resources, when the reliability and availability of internet connection is not assured and when teachers are ill-prepared to achieve this objective (Rabbit and Pagram, 2004).

Information Communication Technology (ICT) can be used to provide an active, engaging, flexible learning environment (Huffaker, 2003). ICT tools such as e-mail, Internet, multimedia and blogging can be used constructively in the classroom to allow for a more student-centred classroom with tasks selected according to each child's learning style. Technology can break down the geographical barriers of being in a rural location by for example, working in a virtual space. For gifted children living in remote rural locations, the use of technology has been seen to provide opportunities for creative and problem solving tasks (Gregor, 2005). The capacity of learning to be tailored to an individual's needs and preferences referred to as the my-ification is a significant aspect of the technology (March, 2006). The variety of forms and the far reaching impact of technology can be a valuable resource for teaching and learning.

Recognising the potential of the ICT, responding to the rapidly changing resources and identifying how they can be used effectively in the classroom presents challenges for the classroom teacher. Understandably, teachers often lack the expertise and confidence to be able to capitalize on using technology in the classroom to enhance the learning environment. The divide between the students – referred to as digital natives, and teachers – often described as digital immigrants can form a significant barrier to change. The curricula emphasis on ICT has challenged teachers to change their pedagogical approaches in order to be able to meet the needs of their students (Prensky, 2001). Teachers and institutions have responded to close the digital divide

through professional development, interpreting curriculum, providing resources and adopting new practices.

In promoting social equity and educational opportunity it is important to include the regional areas of Victoria that are the location of this project. While there is now infrastructure for broadband access in even remote areas of Australia, the reliability and access is not assured (Rabbitt & Pagram 2004). The availability is not restricted only by location; however it is often aggravated by it. The availability of resources and access to the Internet is influenced by the infrastructure available. Rabbit and Pragram refer to the "hidden technological disadvantages" (2004, p. 24) in terms of time and money in providing for example access to a technician or fast internet.

Significance

This paper is significant because it identifies change in teachers practice with respect to the use of ICT in a variety of classroom situations. It reports on the pedagogical strategies teachers used to integrate ICT into their classroom practice in meaningful ways and accommodate their particular situation. The paper is significant in highlighting the variety of ICT resources available in the selected schools. The teachers who initially classed themselves as digital immigrants became ICT literate through participating in the project.

Design and Procedure

This project involved 12 schools- diverse in their size, religious affiliations and location. There were 5 small school (<100 students), 4 medium schools (100-300 students) and 3 large schools (>600 students). The schools were divided into three dispersed hubs across Victoria (Australia).

There were 16 teachers – called coordinators selected to participate in a train - trainer model. At each hub, the Australian Independent Schools Association provided an intensive five day professional development program for the coordinators from that hub. Some resource support for those in need was provided and follow-up mentoring was provided to all coordinators over six months. The train – the- trainer model required a commitment of time, an obligation to train others and the opportunity to become a leader in their school in ICT.

Data was collected from the teachers as to their ICT competencies and use of ICT in the classroom at the beginning and end of the project via interview and questionnaire. Teachers were invited to participate in a blog, providing regular reflective comments about their frustrations and successes. The ICT specialist reported on the teacher's progress as a result of his mentoring visits.

Findings

The opportunity to be involved in the project provided an impetus for all the teachers to improve their current practice with respect to information communication technology. The demands on a classroom teacher meant that all teachers involved found it challenging to take on the added responsibility and commitment that the project involved.

The initial surveys showed that all schools did not have equal access to the technologies, for example a large private grammar school with over 600 students had a sophisticated computer networking system and a large range of resources while a small community school with less than 60 students had a variety of old computers that did not function properly with capacity for only 6 computers to access the Internet at any one time. There was no observable trend in the number of students to computers and the number of computers didn't indicate their usefulness. The results of this project demonstrate how teachers adapt to the available resources. For example, in a small schools with one data projector and limited computers, the teacher used a wireless mouse so all students could work together. This teacher reflects in her blog entry:

"I am getting quite good at setting up and using the data-projector now. It was interesting to see one group of grade 5 boys using the data-projector and screen like I do in the classroom - to stand out the front near the screen and get a student to use the mouse and click on the relevant things. What made it interesting is, that this is the first time that I have ever had the grade 5's in this situation. They had quickly cotton onto how useful it is to use the screen in this fashion".

Not all schools had curriculum policies for the use of ICT and there was a lack of planning or structure to the curriculum development that included and integrated ICT. Despite high level of resources at some schools, the integration of ICT was not guaranteed and there was little evidence of integration of ICT with the other discipline areas.

The initial interviews indicated that the teachers had a variety of backgrounds in the use of ICT and they did not use or think about computers and technologies in the same way. Ten (10/15) of the co-coordinators indicated they use a computer "as much as [they] can" and "for class preparation". Ten or more coordinators indicated they did they could: create diagrams, send email, create slide shows or presentations, research using the Internet, use a laptop, a scanner and a digital camera. Despite having the skills, most were not confident to use the ICT in the classroom. As a results of the project the teachers worked with the curriculum - fitting ICT into existing curriculum and rewriting programs. This teacher coordinator from a well resourced school discussed on the blog what she was doing:

"I met with the other staff and we talked about some of the hurdles (finding time to meet, time release), and ways of attempting to overcome them - we're working on making small changes initially. ICT isn't the only priority - it's finding ways of incorporating it into the existing curriculum, without increasing teachers workload. Becoming familiar with the curriculum requirements and formulating teaching programs that included ICT" Another teacher's comments drew attention to how she worked within the constraints of the limited resources.

"...I realise that I may yet again - have to reassess what I do in computers. Currently I am using computer time to teach the students about the different programs eg. word, excel, powerpoint and typing skills. But now I am thinking that I will have to start teaching numeracy, and literacy using ICT during the computer time allotted".
On Friday, I again used ICT during Grade 6 Numeracy. The children all say how much they appreciate having time to use the computer to do mathematical tasks. Usually computers is only used to type up assignments (using word). I would like to make the computer session meaningful for the students - but now I am unsure of

where to go. As I only have each child on the computer for 20 minutes per week, which I don't feel is enough time"
The teachers at this school actively discussed the role of the ICT in the curriculum, not wanting to compromise the basics.

Physical changes helped the implementation such as having booking sheets for the equipment and placing lists of student-friendly search engines on the wall, getting files and internet sites onto the internet, having the smartboard at a low level- suitable for children. A comment from a teacher during the final interview displays her resistance to using ICT *"I felt quite intimidated by the whole setup (computer lab) and I didn't feel I had the skills to handle a crisis and when things were going wrong I didn't know the steps to help the children so it was in the too hard basket."* The coordinator did some team teaching which helped this teacher overcome her anxieties. Some coordinators gave classes – putting the teacher in the position of the student.

A cooperative approach was actively encouraged between the teachers and the students alike. So for example students were trained to ask three other people before you ask the teacher, and they had a buddy system where fellow students helped each other. The skill of being a problem solver and a risk taker was recognised and applauded. Students in one class were encouraged to keep a journal of their frustrations and accomplishments on the computer. Through their logs students provided critical evaluations of software programs.

Management strategies became very important for schools with slow internet connections. One teacher always had three tasks for her students – getting them to work on an alternative task while waiting for the internet to connect. Another had students turn the computer screens only off to ensure that they were listening to instructions, several teachers used a rotation method, with one using an egg timer to manage the rotation.

The instruction on the role of ICT in the curriculum formed a foundation for most teachers, so that the use of ICT was not seen as introducing new software packages. The data records the teachers' attempts at the integration of ICT in a meaningful way. Because the physical problems, limited resources and infrastructure and time limitations make the task challenging, teachers have reported their frustrations and their actions in the blog and the interviews. Common strategies focused on the curriculum planning, pre-planning and organisation of lessons, behaviour management techniques and cooperative learning strategies.

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